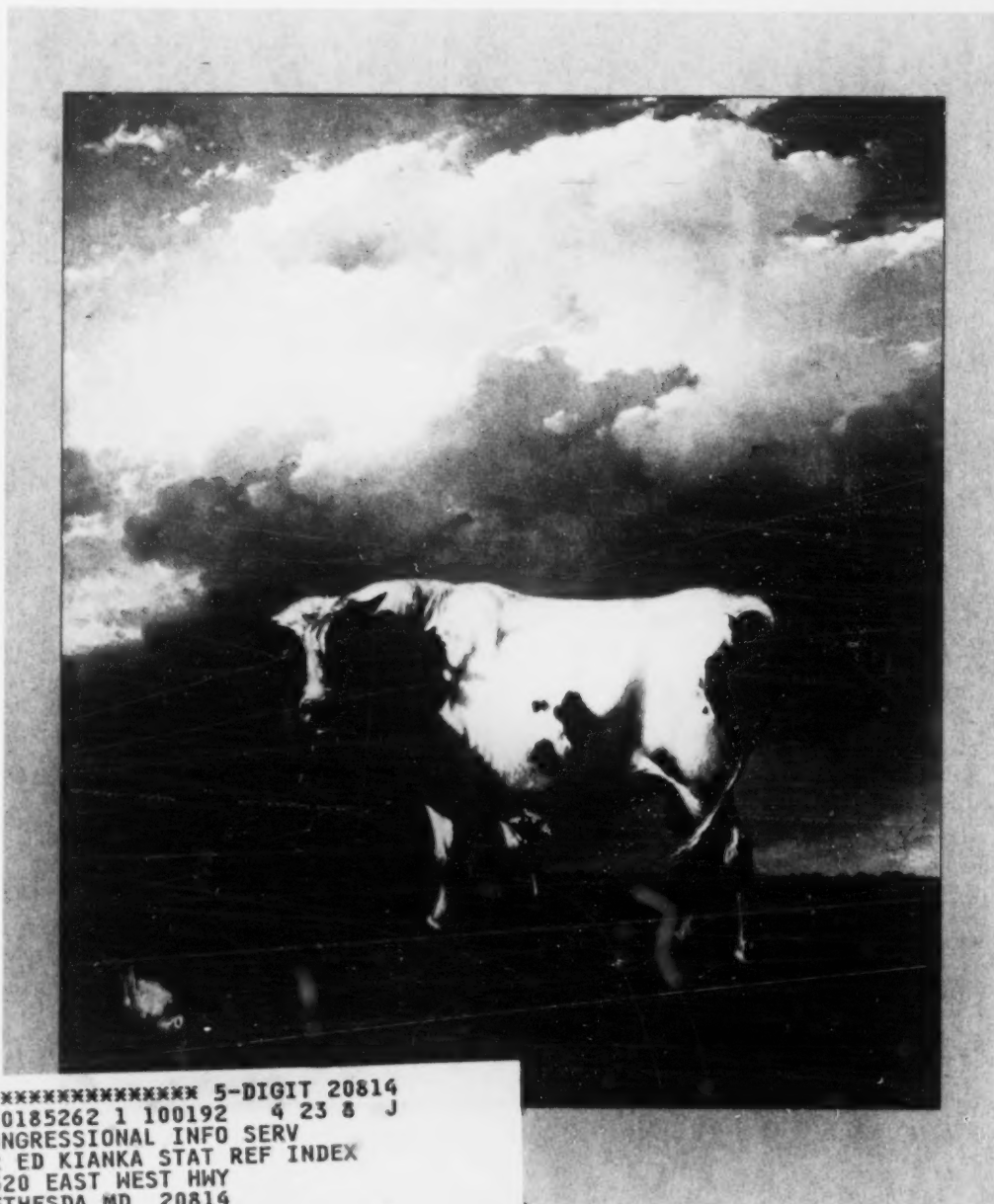


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The Information Exchange

Veterinary Service Market for Companion Animals, 1992

Part I: Companion animal ownership and demographics

This is the first of a 2-part series summarizing findings from the complete report available from the AVMA Center for Information Management. Veterinary service use and expenditures will be addressed in Part II in the next issue.

In November 1991, the Center for Information Management was commissioned by the Executive Board of the AVMA to conduct a nationwide study of US households to update, expand, and report information on the companion animal market for veterinary medical services.

The objectives of the study were to determine populations of dogs, cats, birds, horses, and other pets owned by US households; household demographic characteristics associated with pet ownership; and frequency of times that pets were seen by a veterinarian, and annual veterinary medical expenditures.

The veterinary service

From the AVMA Center for Information Management, J. Karl Wise, PhD, Director; Jih-Jing Yang, PhD, Research Analyst.

market survey for companion animals was conducted between January and March 1992. The survey questionnaire was mailed to 80,000 US households. Regarding survey response, 55,143 households (68.9%) returned usable survey questionnaires. The respondent group was analyzed, compared with the total population of households, and determined to be a representative sample of the population.

Companion Animal Ownership and Populations

On the basis of information provided by the nationally representative sample of 55,143 US households, it was estimated that 54.8 million households, 57.9% of all US households, owned a companion animal on Dec 31, 1991. For this study, companion animals included dogs, cats, birds, horses, and any of several other pets, such as hamsters, gerbils, fish, and rabbits.

Regarding dogs, approximately 34.6 million households owned a dog at year-end in 1991 (Table 1). This esti-

mated population of dog-owning households was nearly unchanged from the 1987 estimate of 34.7 million households.¹ Nevertheless, on the basis of growth in the total number of US households, the percentage of households that owned dogs decreased from 38.2% in 1987 to 36.5% in 1991. In 1991, a mean of 1.52 dogs were owned per dog-owning household; thus, the dog population was estimated to be 52.5 million dogs, nearly unchanged from 52.4 million dogs in 1987.

In 1991, approximately 29.2 million (30.9%) households owned a cat, up slightly from 27.7 million (30.5%) households in 1987 (Table 1). On the basis of 1.95 cats owned per cat-owning household, the cat population was 57.0 million cats in 1991, an increase from 54.6 million cats in 1987.

Regarding birds, 5.4 million (5.7%) households owned a bird in 1991, nearly unchanged from 5.2 million (5.7%) in 1987 (Table 1). On the basis of 2.16 birds owned per bird-owning household,

Table 1—Pet ownership and population, 1987, 1991

	Households that owned a pet				Mean No. of pets owned per household		Pet population (millions)	
	(%)		No. (millions)		1987	1991	1987	1991
	1987	1991	1987	1991				
Dogs	38.2	36.5	34.7	34.8	1.51	1.52	52.4	52.5
Cats	30.5	30.9	27.7	29.2	2.04	1.95	54.6	57.0
Birds	5.7	5.7	5.2	5.4	2.48	2.16	12.9	11.7
Horses	2.8	2.0	2.6	1.9	2.63	2.54	6.6	4.9
Other pets	...	6.7	...	6.3	...	...	...	...

Table 2—Percentage of pet owners that owned another pet, 1991

Primary pet	Dog	Cat	Bird	Horse
Dog	...	40.3	9.5	4.8
Cat	47.6	...	8.1	4.5
Bird	60.8	43.6	...	5.0
Horse	83.0	68.7	13.9	...

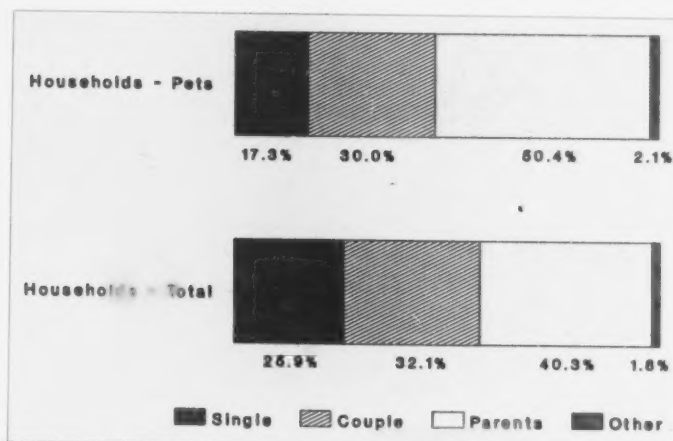


Figure 1—Profile of pet-owning households by life-stage, 1991.

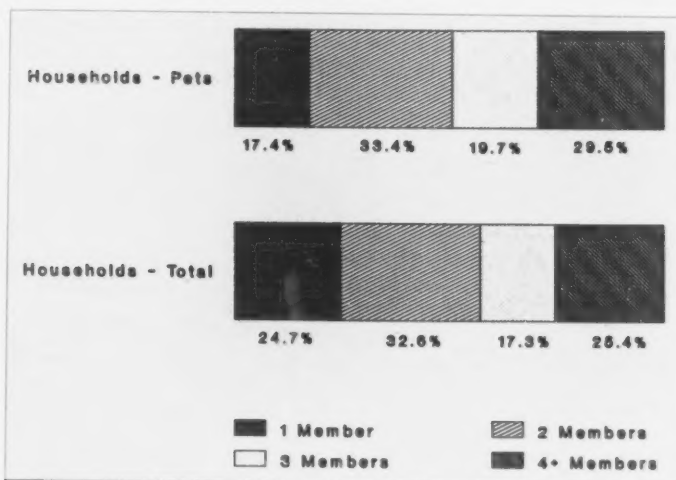


Figure 2—Profile of pet-owning households by household size, 1991.

the population of birds owned by households was 11.7 million birds, down from 12.9 million birds in 1987. The decrease may be attributable, in part, to a decrease in the mean number of birds owned per bird-owning household from 2.48 birds in 1987.

The estimated number of households that owned horses in 1991 was 1.9 million (2.0%), a decrease from 2.6 million (2.8%) in 1987 (Table

1). The 1991 population of horses owned by households was 4.9 million horses, down from 6.6 million horses in 1987. The mean number of horses owned per horse-owning household was 2.54 in 1991, a decrease from 2.63 in 1987.

Approximately 6.7% of US households owned other pets in 1991, including an estimated 24.0 million fish, 4.6 million rabbits, 1.3 million

hamsters, 600,000 gerbils, and several million other household pets of various species.

Many households owned more than 1 type of pet. Table 2 shows the percentage of each type of pet-owning household that owned another type of pet. Approximately 40.3% of dog owners also owned a cat, and 47.6% of cat owners also owned a dog. Regarding horse owners, 83% of horse owners also owned a dog, and nearly 69% also owned a cat.

Pet Owner Profiles

An important objective of this study was to determine the demographic factors associated with pet ownership. Many demographic factors were studied, including employment, age of head of the household, and educational level. Four variables found to be particularly important were household life-stage, income, size of household, and home ownership.

Household life-stage is a method used to classify households on the basis of family composition. Life-stage categories of households were defined as follows: Single was 1-member household; Couple was multimember household and no children at home; Parent was multimember household with 1 or more children at home.

Figure 1 graphically contrasts the profile of pet-owning households with all households by life-stage groups. These data suggest that pet-owning households were more likely to be parental households with children than households with singles. On one hand, 50% of pet-owning households were parents, compared with 40% of all households in the country. On the other hand, 17% of pet-owning households were singles, compared with nearly 26% of all households.

Pet-owning households were more likely to be house-

Table 3—Profile of pet-owning households by household income, 1991

Household income	All households (%)	Pet-owning households (%)
<\$12,500	18.7	15.0
\$12,500 to \$24,999	20.7	19.9
\$25,000 to \$39,999	22.4	23.5
\$40,000 to \$59,999	20.0	21.8
≥\$60,000	18.2	19.9

holds with higher annual household income (Table 3). A higher percentage of pet-owning households were in the high income brackets compared with all households, and a lower percentage of pet-owning households were in the low income brackets. For example, 65% of pet-owning households had incomes more than \$25,000, and 61% of all households were in the same income brackets.

A comparison of the pro-

file of pet-owning households with all US households, according to size of household, was shown (Figure 2). Pet-owning households were more likely to be multimember households than 1-member households. Only 17.4% of pet owners were 1-member households, compared with 25% of all households in this category. In contrast, 30% of pet-owning households were ≥ 4-member households, compared with 25% of all households.

Table 4—Profile of pet owning households by home ownership, 1991

Home ownership	All households (%)	Pet-owning households (%)
Own	72.7	76.2
Rent	21.2	18.2
Other	3.7	3.8
No answer	2.5	1.8

Pet ownership was higher among households that owned their home (Table 4). In addition, 76% of companion animal owners owned their home, compared with 73% of all households. On the other hand, only 18% of pet owners were renters, compared with 21% of all households.

Reference

1. Troutman CM. The veterinary services market for companion animals, 1988. American Veterinary Medical Association. Overland Park, Kan: Charles, Charles Research Group, August, 1988.

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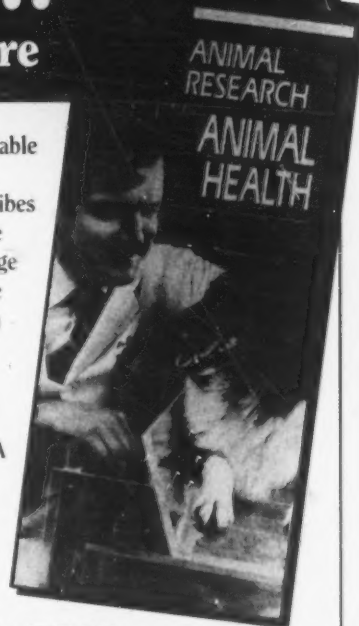
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Reports of Retrospective Studies

Prepurchase evaluation of horses: 134 cases (1988-1990)

Andrew J. Dart, BVSc; Jack R. Snyder, DVM, PhD; John R. Pascoe, BVSc, PhD;
Dennis M. Meagher, DVM, PhD; W. David Wilson, BVMS, MS

Summary: To quantify some components of prepurchase evaluations in horses, records from 134 evaluations performed during a 2-year period were reviewed and the outcome was determined via telephone follow-up interview. Sixty-two percent of the prepurchase evaluations had been performed at the clinic and 38% had been performed in the field by the ambulatory service. All evaluations included physical and lameness examinations, whereas radiography (49%), endoscopy (15%), nerve blocking (5%), transrectal palpation (3%), hematologic analysis (2%), electrocardiography (2%), drug testing for analgesic agents (2%), and ultrasonography of the flexor tendons (1%) were not always performed. Fifty-nine percent of horses evaluated at the clinic were radiographed, compared with 33% of horses evaluated in the field ($P < 0.05$).

Thirty-seven percent of horses evaluated were judged serviceable for their intended use. Thirty-five percent of horses evaluated at the clinic were assessed to be serviceable, compared with 41% of those evaluated in the field ($P < 0.05$). Horses used for pleasure riding (48%) tended to be considered serviceable more often than horses used for more athletic endeavors (3-day eventing, 33%; hunter/jumper, 24%; show, 31%; dressage, 30%). The most common basis for finding a horse unserviceable was lameness (88%).

On the basis of a telephone interview, horses were divided into 5 groups: horses determined unserviceable on evaluation and not purchased ($n = 40$); horses determined unserviceable on evaluation, purchased, and then found serviceable on follow-up interview ($n = 35$); horses determined unserviceable on evaluation, purchased, and then found unserviceable on follow-up interview ($n = 9$); horses determined serviceable on evaluation, purchased, and found serviceable on follow-up interview ($n = 42$); and horses determined serviceable on evaluation, purchased, and found unserviceable on follow-up interview ($n = 8$).

The buyer and seller were present at the evaluation in 34% of cases. The buyer alone was present in 57% of cases, the seller alone in 4% of cases, whereas neither was present in 6% of cases. The potential buyer had used the horse for its intended purpose prior to the prepurchase evaluation in 39% of cases for a mean time of 20.5 days, but this did not appear to affect the serviceability of the horse on follow-up evaluation. Five horses that were leased for > 6 months prior to purchase were all serviceable on follow-up interview, irrespective of the findings at the time of the prepurchase evaluation.

There was a tendency for the value of horses examined at the clinic to be higher than those evaluated by the ambulatory service. The price paid by the buyer was reduced through negotiations on the basis of the prepurchase evaluation in 6% of cases.

Lameness was seen only in horses within the unserviceable group. Lameness tended to be seen more often in horses valued $> \$2,500$ (61%, 46/75) than in horses valued $\leq \$2,500$ (48%, 28/59). Lameness was associated with 92% (22/24) of horses valued at $> \$2,500$ within the group judged to be unserviceable and not purchased.

Radiography was performed to investigate a specific lameness in 24% (32/134) of evaluations and for survey purposes in 25% (34/134) of evaluations. Of horses radiographed within the unserviceable group, radiography commonly was performed for specific lameness (84%, 32/38) and rarely for survey purposes (24%, 9/38), whereas only survey radiographs were obtained from the serviceable group because no horses exhibited a specific lameness. Radiography was significantly ($P < 0.05$) more likely to have been performed in horses valued $> \$2,500$ (65%, 49/75) than in those valued $\leq \$2,500$ (29%, 17/59), and this trend was reflected in all categories. For survey radiographs, the combination of tarsi and bilateral distal forelimbs was the most commonly radiographed area (44%). Bilateral distal forelimbs alone were the second most commonly radiographed area (41%).

A written report summarizing the findings of the evaluation was furnished in 24% of cases. At the time of follow-up interview, 75% of buyers indicated that they would have liked a written report.

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Soundness examinations, prepurchase examinations, or veterinary checks have long been performed by veterinarians.¹ Because of legal ramifications, veterinarians have preferred to define a horse as being serviceable or suitable rather than sound. Suitability is a "term of art" intended to mean temperament, and a specific person's ability to use that horse for an intended task.² Serviceable may be a more useful term because it implies the relationship of physical ability to intended use and is more likely to fall within the scope of a veterinary examination.²

As the value of performance horses has increased each year, so has the potential for litigation. Consequently, it appears that some veterinarians are avoiding these prepurchase evaluations, and there are vastly differing opinions on the performance and reporting of results from these evaluations.

In the 1960s, the American Association of Equine Practitioners (AAEP) made attempts to define and standardize procedures to be performed in prepurchase evaluations and the method by which results should be reported. In 1979, when the AAEP was about to officially implement these guidelines, it was decided that if a veterinarian did not follow the guidelines exactly, there would be the potential for litigation.³ Consequently, without set guidelines and with the move toward specialization in various veterinary disciplines, the opinion on what fulfills an adequate prepurchase evaluation and the method by which these results should be reported varies widely.

The purpose of the study reported here was to review a series of prepurchase evaluations performed at the teaching hospital to quantify some of the components of these evaluations and examine the data as it relates to outcome.

Materials and Methods

Medical records of all prepurchase evaluations performed by veterinarians at the teaching hospital during a 2-year period between January 1988 and January 1990 were retrieved. The information that was recorded included: the intended use of the horse, whether the evaluation was performed by the ambulatory service or at the clinic, the clinician performing the evaluation, the procedures included in the evaluation, whether the evaluation was completed or stopped, whether a radiographic examination was performed, and whether the radiographic examination was specifically for a lameness or blemish or for survey purposes. It was also recorded whether the horse was determined to be serviceable or unserviceable for its intended use, and, if found to be unserviceable, the reason why.

All complete records were included for telephone follow-up interview. Information recorded from the follow-up interview included: whether the client was the buyer or seller, whether the client was a regular teaching hospital client, whether the

buyer had taken the horse and used it for its intended purpose for a period of 2 days or longer, whether the buyer or buyer's agent, seller or seller's agent, both, or neither were present at the evaluation, whether the client had a prepurchase evaluation performed by another veterinarian before or after evaluation at the teaching hospital and the outcome of this evaluation, the asking price of the horse, the paid price for the horse and, if the price was reduced, whether it was related to the findings of the prepurchase evaluation, the present use of the horse, and whether there had been any problems with the horse since purchase. Clients also were asked whether they had received a written report and whether they would like a written report on the findings of a prepurchase evaluation of any horse they purchased.

Evaluation of medical records and follow-up interviews were completed for 134 horses. The χ^2 test for independence was used to test for differences between the groups. Differences were considered significant at a P value < 0.05 .

Results

Thirty-seven veterinarians had performed the 134 prepurchase evaluations. Sixty-two percent ($n = 83$) of the evaluations had been performed at the clinic and 38% ($n = 51$) had been performed in the field by the ambulatory service. The procedure for a prepurchase evaluation included: a visual inspection and thorough physical examination that included thoracic and abdominal auscultation and ophthalmic examination, lameness examination with flexion tests, and ancillary tests if deemed necessary by the veterinarian and approved by the parties involved in the evaluation or requested by the parties. The lameness examination was not performed with the rider on the horse's back and was limited to trotting and lunging of the horse. Evaluations were completed on 88% ($n = 118$) of horses, but were stopped during the evaluation on 12% ($n = 16$) of horses because of finding something that would cause the horse to be unserviceable for its intended use. Reasons for stopping the evaluation included lameness ($n = 12$), eye conditions ($n = 2$), and respiratory tract infections ($n = 2$).

Ancillary tests performed included radiography (49%, $n = 66$), endoscopy (15%, $n = 20$), nerve blocking (5%, $n = 7$), transrectal palpation (3%, $n = 4$), hematologic analysis (2%, $n = 2$), electrocardiography (2%, $n = 2$), drug testing for analgesic agents (2%, $n = 2$), and ultrasonography of the flexor tendons (1%, $n = 1$). Fifty-nine percent ($n = 49$) of the horses examined at the clinic were radiographed, compared with 33% ($n = 17$) of horses seen by the ambulatory service ($P < 0.05$). All other ancillary tests were performed only on horses admitted for evaluation at the clinic.

Of the 134 horses, 50 (37%) were judged to be serviceable, whereas 84 (63%) were unserviceable.

Thirty-five percent ($n = 29$) of horses evaluated at the clinic were assessed as serviceable, compared with 41% ($n = 21$) of those evaluated in the field by the ambulatory service ($P < 0.05$).

Horses that were to be used for pleasure and trail riding tended to be assessed as serviceable more often (48%, 22/46) than all horses evaluated (37%, 50/134), whereas horses used for more athletic endeavors such as 3-day eventing (33%, 8/24), hunter/jumper (24%, 5/21), show (31%, 4/13), or dressage (30%, 3/10) tended to be assessed as serviceable less frequently (Table 1).

Lameness on the day of evaluation was the basis for finding a horse unserviceable in 88% (74/84) of cases, whereas 7% (6/84) of the horses were assessed as unserviceable on the basis of findings on survey radiography even though they were not lame. Four of 20 (5%) horses were assessed as unserviceable because of other conditions (2 with eye problems and 2 with respiratory tract infections).

On the basis of the follow-up interview, horses were subdivided into 5 groups (Table 2). Group 1 included horses unserviceable on evaluation and not purchased ($n = 40$). Group-2 horses had been deemed unserviceable but had been purchased despite findings of the evaluation, and were then found to be serviceable on follow-up interview ($n = 35$). Horses in group 3 had been found unserviceable on evaluation, purchased, and found to be unserviceable on follow-up interview ($n = 9$). Group 4 included horses found to be serviceable on evaluation, purchased, and found to be serviceable on follow-up interview ($n = 42$), and group 5 included horses found to be serviceable on evaluation, purchased, but found to be unserviceable on follow-up interview ($n = 8$).

All prepurchase evaluations had been performed on behalf of the buyer; thus, long-term serviceability of horses in group 1 could not be determined because these horses were not purchased and were lost to follow-up evaluation.

The buyer or buyer's agent and the seller or seller's agent were present in 34% ($n = 45$) of evaluations. The buyer or buyer's agents were present in 57% ($n = 76$) of evaluations, whereas the seller or seller's agent alone were present in 4% ($n = 5$) of evaluations. Neither party was present in 6% ($n = 8$) of evaluations. Buyers were regular teaching hospital clients in 66% ($n = 89$) of the 134 evaluations.

Horses were used for the intended purpose by the potential buyer prior to the prepurchase evaluation in 39% ($n = 52$) of the evaluations. Of all horses purchased, irrespective of the findings of the evaluation, 42% ($n = 35$) were used by the potential buyer for their intended purpose prior to the evaluation. Thirty-eight percent (29/77) of horses purchased and found to be unserviceable on follow-up interview (groups 2 and 4) had been used for the intended purpose prior to purchase. This did not differ significantly from those horses that

Table 1—Intended use and number classified as serviceable for 134 horses undergoing prepurchase evaluation at the University of California Veterinary Medical Teaching Hospital

Intended use	No. evaluated (%)	No. serviceable (%)
Pleasure/trail	46 (34)	22 (48)
3-day eventing	24 (18)	8 (33)
Hunter/jumper	21 (16)	5 (24)
Show/english/western pleasure	13 (10)	4 (31)
Dressage	10 (7)	3 (30)
Thoroughbred racing	4 (3)	0 (0)
Endurance	4 (3)	2 (50)
Barrel racing	4 (3)	2 (50)
Roping	4 (3)	1 (25)
Schooling	2 (1.5)	1 (50)
Broodmare	2 (1.5)	2 (100)

had been used by the potential buyer for their intended purpose prior to the evaluation and were purchased but were later found to be unserviceable (35%, 6/17).

The length of time that horses were used by the potential buyer prior to the prepurchase evaluation ranged from 2 to 90 days (mean, 20.5 ± 22.7 days). Five horses that were leased for periods between 6 months and 2 years by the potential buyer were not included in this analysis. Two of these horses were assessed as serviceable at the prepurchase evaluation and 3 were assessed as unserviceable on the basis of lameness on the day of evaluation. All 5 horses were purchased despite the findings of the evaluation and were found to be serviceable for their intended purpose on follow-up interview.

One horse that was assessed as unserviceable because of evidence of lameness during the evaluation at the teaching hospital was subsequently examined by a second veterinarian at another clinic who assessed the horse to be serviceable. The horse was purchased and was serviceable for its intended use on follow-up interview.

The price asked for the horse by the seller was reduced through negotiation on the basis of the findings of the prepurchase evaluation in 6% (5/94) of cases where the horse was purchased. The mean value of horses examined was $\$6,554.85 \pm \$13,961.76$ (range, \$0.00 to \$150,000.00). The mean value of horses examined by the ambulatory service ($\$2,741.18 \pm \$2,889.86$; range, \$0.00 to \$15,000.00) tended to be lower than the mean value of horses examined at the clinic ($\$8,771.08 \pm \$17,227.49$; range, \$0.00 to \$15,000.00).

Forty-four percent ($n = 59$) of all horses seen were valued at $\leq \$2,500$ and 56% ($n = 75$) were $> \$2,500$. The ambulatory service evaluated 51 horses, of which 63% ($n = 32$) were $\leq \$2,500$ and 37% ($n = 19$) were $> \$2,500$. Of the 83 horses examined at the clinic, 33% ($n = 27$) were $\leq \$2,500$, whereas 68% ($n = 56$) were $> \$2,500$.

Lameness was identified only in horses assessed as unserviceable on evaluation and was not

Table 2—Lameness and radiography results of prepurchase evaluation of 134 horses

Horses Groups*	All horses					Horses valued at ≤ \$2,500					Horses valued at > \$2,500				
	Radiography performed					Radiography performed					Radiography performed				
	Total	Lame	No.	for lameness	for survey	Total	Lame	No.	for lameness	for survey	Total	Lame	No.	for lameness	for survey
All	134	74	66	32	34	59	28	17	7	10	75	46	49	25	24
Unserviceable	84	74	36	32	6	32	28	7	7	0	52	46	31	25	6
Group 1	40	36	19	16	3	16	14	3	3	0	24	22	16	13	3
Group 2	35	29	13	13	3	13	11	4	4	0	22	18	9	9	0
Group 3	9	9	6	3	0	3	3	0	0	0	6	6	6	3	3
Serviceable	50	0	28	0	28	27	0	10	0	10	23	0	18	0	18
Group 4	42	0	22	0	22	23	0	8	0	8	19	0	14	0	14
Group 5	8	0	6	0	6	4	0	2	0	2	4	0	4	0	4

*Group 1—Horses unserviceable at evaluation and not purchased; Group 2—Horses unserviceable at evaluation, purchased, and found to be serviceable on telephone follow up; Group 3—Horses unserviceable at evaluation, purchased, and found to be unserviceable on telephone follow up; Group 4—Horses serviceable at evaluation, purchased, and found to be serviceable on telephone follow up; Group 5—Horses serviceable at evaluation, purchased, and found to be unserviceable on telephone follow up.

detected in horses assessed as serviceable (Table 2). Lameness tended to be seen more often in horses valued at > \$2,500 (61%, 46/75) than in horses valued at ≤ \$2,500 (48%, 28/59). Lameness in horses valued at > \$2,500 was associated with the high prevalence of lameness in horses within group 1 (90%, 36/40) and particularly those within group 1 that were valued at > \$2,500 (92%, 22/24).

Radiographs were obtained specifically to investigate lameness in 24% (32/134) of all horses evaluated, whereas survey radiographs were taken in 25% (34/134) of all horses evaluated (Table 2). Within the unserviceable groups (groups 1 to 3), horses were radiographed most commonly because of specific lameness (84%, 32/38) and rarely for survey purposes (16%, 6/38), whereas horses in the serviceable groups (group 4 and 5) only had survey radiographs taken.

Numbers of horses radiographed specifically for lameness (24%, 32/134) was significantly ($P < 0.05$) lower than the number of horses determined to be lame (55%, 74/134). This was true for horses valued at ≤ \$2,500 or > \$2,500 and for all groups of unserviceable horses.

Radiographs were significantly ($P < 0.05$) more likely to have been taken in horses valued at > \$2,500 (65%, 49/75) than in horses valued at < \$2,500 (29%, 17/59). This trend was reflected within all groups of horses deemed to be serviceable (groups 4 and 5) and unserviceable (groups 1 to 3) on evaluation. Within the unserviceable group (groups 1 to 3), the frequency of radiographic examination of horses in both price ranges did not differ on the basis of whether the horse was purchased or not.

Survey radiography was performed on 34 horses. The most commonly radiographed areas were a combination of tarsi and bilateral distal forelimbs (44%, 15/34), and bilateral metacarpophalangeal joints, and bilateral distal forelimbs (6%, 2/34) or carpi, bilateral metacarpophalangeal joints, and bilateral distal forelimbs (3%, 1/34).

All horses found to be serviceable at the time of telephone follow-up interview were being used

for their intended purpose without complication. Of 9 horses in group 3, 7 had lameness problems directly associated with problems detected at the prepurchase evaluation. Three of these horses also had evidence of degenerative joint disease on radiographs taken at the prepurchase evaluation. The 4 other horses did not have radiography performed. One horse in group 3 was not being used because of bad temperament. Another horse in group 3 that had been found to have a forelimb lameness during the prepurchase evaluation was later found by another veterinarian to have a lameness of the stifle that precluded further use. Of the 8 horses in group 5, 3 were not being used because of bad temperament, 2 had lameness originating from the tarsi (both had normal radiographs of the tarsi at the prepurchase evaluation), 1 had developed a lameness of the forelimbs bilaterally, which originated from the distal extremities. This horse had had a normal radiographic examination of the distal forelimbs at the prepurchase evaluation. One horse in group 5 had developed a severe superficial flexor tendonitis. Radiographically, the horse had mild lesions of the navicular bone at the time of the prepurchase evaluation. One horse in group 5 that had not had radiography performed during the prepurchase evaluation had developed laminitis without rotation.

A written report summarizing the findings of the evaluation was furnished in 24% (32/134) of cases. On telephone follow-up interview, 75% (101/134) buyers indicated that they would like a written summary of the evaluation for horses they purchase.

Discussion

Other reports and panel discussions on prepurchase evaluations have been based on personal experiences of veterinarians from private practice and university clinics.¹⁻¹¹ Consequently, just as the use and value of horses being evaluated and the amount of information a potential purchaser expects differ between practices, so does the opinion of veterinarians on what should comprise a prepurchase evaluation and how the results of the

evaluation should be reported. The study reported here attempted to evaluate a series of prepurchase evaluations to assess the findings as they relate to the long-term serviceability of the horse for its intended use. The limitation of our study is that it represented the results of only some aspects of prepurchase evaluations at a single hospital. The examinations, however, were performed under field conditions and within the clinic by 37 veterinarians with a variety of veterinary and equine-related backgrounds. They also were performed on horses having a wide variety of uses and values.

The procedures believed to be necessary for prepurchase evaluation vary greatly between investigators. Reid¹⁰ suggested that a veterinarian is not obligated to use radiography. Soule² stated that endoscopic examination of the upper airway is mandatory when he performs a prepurchase evaluation, whereas Beeman⁹ suggested that it is only necessary if indicated. There also is some debate on whether the risks of transrectal palpation outweigh the benefits when performed on horses whose intended purpose is not breeding.^{2,9} Moyer and Abbott⁴ stated that they see no reason not to perform a less than ideal examination if the buyer requested it and if they are given the opportunity to state such in a letter. Beeman⁹ agreed with this in essence; however, he stated that legal problems may arise if the purchaser finds a problem after purchase of which he or she was not made aware at the time of examination. This puts the veterinarian performing the evaluation in the difficult position of choosing which ancillary tests should be used to determine the potential serviceability of a particular horse, while remaining within the financial constraints of the buyer. It was interesting that in the study reported here, ancillary procedures, in particular, radiography and endoscopy, were performed far less frequently than we had anticipated, despite the fact that these procedures were readily available. Many potential buyers may be satisfied with thorough physical and lameness examinations and are not financially interested in pursuing other diagnostic services. Beeman⁹ suggested that to accomplish an evaluation at any level, it is essential to have the proper equipment or have knowledge of referral centers where it can be obtained.⁹

In our study, it appeared that having the equipment available to perform an evaluation at any level requested by the purchaser or deemed necessary by the veterinarian, within the financial limits of the purchaser, was of greater importance than the performance of the same evaluation on every horse. We agree with other investigators^{4,5,7} that communication to the prospective buyer of the limitations of the evaluation is important.

There was a tendency for horses evaluated by the ambulatory service to be found serviceable more often (41%) than those evaluated in the clinic (35%). This may be attributable to the fact that ancillary diagnostic tests were performed more fre-

quently in the clinic, which facilitated a more thorough evaluation, compared with that performed in the field. This also would be consistent with the higher frequency of radiographic examinations performed at the clinic (59%) compared with that on horses in the field (33%). It is possible that clinicians on the ambulatory service were less likely to pursue radiography because of the difficulty associated with getting an adequate, complete diagnostic series of films in the field with a portable X-ray unit. Alternatively, the tendency for horses examined by the ambulatory service to be lower in value than those seen in the clinic may reflect that potential buyers of less expensive horses are less likely to invest in ancillary diagnostic tests.

Other investigators^{1,8,9} have stressed that veterinarians evaluating a horse should have a thorough knowledge of the intended purpose of the horse. Although referral may be an option, some clients may find it more convenient and may be more comfortable with their regular veterinarian conducting the prepurchase evaluation, even when that veterinarian has limited experience with a particular equestrian discipline. Potential buyers of horses in our study were regular teaching hospital clients in 66% of cases, and in a private practice, this percentage is likely to be higher; thus, the veterinarian is likely to be familiar with the buyer's motives for purchasing the horse.

Preferences regarding who should be present at the examination as well as the relationship and obligations of the veterinarian to the buyer and seller differ among veterinarians.^{2,4,9} Beeman⁹ insisted that the buyer and seller be present, and Moyer and Abbott⁴ stressed the potential for legal complications if the seller is not present and a problem develops with the horse during the examination. We prefer that all parties be present at the examination to avoid legal complications and encourage open communication; however, this is not always possible, as evidenced by the study reported here. Both parties were present in only 34% of examinations, whereas the buyer alone was present in 58% of cases. Horses were examined when neither was present in 6% of cases. For all horses in our study, the client was the potential buyer. It is generally agreed that to avoid a conflict of interest it is best not to examine a horse for the seller, particularly if the seller is a regular client.^{2,4,9} Soule² suggested that it is difficult to know what a stranger expects from an examination; thus, he rarely examines a horse for a client he does not know. Soule² and Moyer and Abbott⁴ have addressed the need to have a working knowledge of the intended purpose of the horse and to have the potential buyer work the horse during the lameness examination. Beeman⁹ however, suggested that to limit the legal ramifications associated with either the horse or rider being injured during the examination, a horse should be thoroughly tried and in the hands of the potential buyer for at least 72 hours.

He also suggested that the ability of a horse to perform is not the responsibility of the veterinarian. In our study, horses were used for the intended purpose by the potential buyer before the prepurchase evaluation in only 39% of cases; however, the mean time that the horses were used on trial was 20.5 days. Although use of the horses for this period did not affect serviceability on follow-up interview (used and serviceable, 38%; used and unserviceable, 35%) all 5 horses leased for at least 6 months prior to purchase were serviceable on follow-up interview, irrespective of the findings of the prepurchase evaluation. This may suggest that there is some benefit for the potential purchaser to have at least closely observed, if not leased, the horse for an extended time prior to evaluation.

There was a tendency for horses that were to be used for pleasure/trail riding to be assessed as serviceable on evaluation (48%) more frequently than all horses found serviceable (37%). Conversely, horses used for more athletic purposes, such as 3-day eventing (33%), hunter/jumper (24%), show/english and western pleasure (31%), and dressage (30%), had a tendency to be found serviceable less frequently. Lameness on the day of evaluation (88%) was the most common reason horses were found unserviceable. Lameness was not detected in any horses found to be serviceable, suggesting that lameness was reason to find a horse unserviceable irrespective of the intended purpose. There was a tendency for lameness to be identified more frequently in horses valued at > \$2,500 (61%), compared with those valued at < \$2,500 (48%). A high number of lamenesses (36/40) was detected within horses in group 1, specifically those valued at > \$2,500. Radiography was more likely to have been performed on horses valued at > \$2,500. It is likely that more valuable horses have athletic purposes and consequently are at greater risk for lameness problems. The value of these horses may be such that the potential buyer sees a need and is in a financial position to permit a more extensive evaluation. Consequently, it is likely that the more strenuous or precise the intended activity, the more important minor abnormalities become. This may be why there was a tendency for a higher percentage of pleasure and trail horses to be found serviceable, compared with those used for more athletic endeavors.

Reid¹⁰ has stated that if survey radiography is to be performed, potential areas of future unsoundness should be targeted. It generally is accepted that the front feet and tarsi often are prone to degenerative changes.^{2,10} On the basis of results of the study reported here, these areas were the most frequently radiographed.

The most notable finding in our study was the serviceability of horses on follow-up interview. Horses within the unserviceable on evaluation and not purchased group were effectively lost to follow-up evaluation. Of those horses found un-

serviceable on evaluation, 52% were purchased despite the findings of the evaluation. This suggested that in many cases, potential buyers had decided to buy a horse regardless of the result of the prepurchase evaluation. Of the horses found to be unserviceable and purchased, 80% were later said to be serviceable for their intended use. Because the most common grounds for finding a horse unserviceable on evaluation was lameness, it appeared that many horses found unserviceable on the basis of lameness on the day of evaluation were, in fact, potentially serviceable. Determination of lameness may be related to the degree of difficulty of the evaluation or the surface on which the work is being performed. The lameness also may have been transient, thus not affecting long-term serviceability of the horse. Horses found lame on evaluation should be reevaluated at a later date if requested by the parties involved. In some cases, lameness may not be grounds for finding a horse unserviceable for its intended use if this is acceptable to the owner. Eighty-four percent of horses found to be serviceable on initial evaluation were found to be serviceable on follow-up interview. Although this percentage of horses is not significantly different from the number of horses found unserviceable, purchased, and found to be serviceable on follow-up interview, it is worth noting that 48% of those horses found to be unserviceable on evaluation were not purchased on the basis of evaluation, and thus, were lost to follow-up evaluation. Therefore, from our study, it is not possible to assess the reliability of the prepurchase evaluation as it is performed at our hospital for predicting serviceability of a horse for its intended use.

Many veterinarians involved in the early attempts to define guidelines for prepurchase evaluations looked toward developing an evaluation form,^{1,5,6} but others have moved away from issuing a certificate because they believe that the results of a prepurchase evaluation should not be delivered as a pass/fail or serviceable/not serviceable judgment.^{2,4,9} The veterinarian should act in an advisory capacity, providing a verbal report to the potential buyer with the information necessary to make an educated decision. The number of horses found to be serviceable for the intended purpose at the follow-up interview despite being found unserviceable on examination in the study reported here would stress the need not to pass or fail a horse and to be careful about finding a horse unserviceable on the basis of 1 examination. Rendering a negative judgment may adversely affect the value of horses with transient problems that do not affect their long-term serviceability, and may also cause animosity between the parties involved in the sale and between the parties and the veterinarian.

Moyer and Abbott³ have outlined how they prefer to write a letter outlining findings of a prepurchase evaluation, and Bonnie³ has discussed the legal implications. In our study, a written report on

the evaluation was furnished in only 24% of cases. On follow-up interview, 75% of clients said they would have liked a written report. In all cases, clients specified that this would be useful only as part of their medical records.

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Book Review:

Anatomy and Physiology of Farm Animals, 5th Edition

This text represents a well-organized, well-illustrated, and well-indexed source of anatomy and physiology of common domestic mammals in a time when text books are increasingly voluminous. It presents the anatomy and physiology in about 530 pages, including many illustrations. It has, for several years, been useful as an introduction to these subjects for students of animal science. Until recently, it has been the only text available for this purpose, and has served this responsibility reasonably well. The anatomic principles have traditionally been well presented in this text, whereas the presentation of physiologic principles has traditionally been weak. As physiologic concepts continue to evolve, the text has not pursued them, but has retained ideas that are no longer acceptable. The current edition demonstrates some improve-

ment over the 4th edition in the correction of some errors and misunderstandings. This text would be useful to undergraduate animal science students for its anatomic concepts alone. To consider the text acceptable, however, even as an adequate introduction to physiology, would be an error. Many currently accepted physiologic concepts and facts are simply misrepresented or are not presented at all.

Although there are many illustrations and tables of good quality, many illustrating physiologic concepts, should be updated, along with the text, to represent current concepts. Many of these, such as Table 10-1, which indicates that parasympathetic N.S. produces vasodilatation in skeletal muscle, and Figure 14-9 indicating that the kidney produces a factor that with plasma globulins results in erythropoietin, are simply in error. Er-

rors such as these are too numerous to enumerate in this review.

The preface indicates that the author has attempted to make this text more useful to veterinary students and practitioners without sacrificing the simplicity and clarity desirable in an undergraduate text. This has been accomplished, and the text would serve its ends well if it were more factual. Throughout the text, in all sections, including those rewritten by the co-author, there are serious errors of fact and concept that could easily have been corrected by the eye of a physiologist.—[*Anatomy and Physiology of Farm Animals, 5th Edition*. By R. D. Frandson and T. L. Spurgeon. 572 pages; illustrated. Lea & Febiger, PO Box 3024, 200 Chester Field Parkway, Malvern, PA 19355-9725. 1992. Price \$47.95.]—JAMES E. BREAZILE